

SYSTEMIC SYMPTOMS FROM CANDIDA IN THE GUT: REAL OR IMAGINARY?*

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OVER the past 20 years, infections due to organisms of the genus *Candida* have become prominent problems in patients treated with modern therapeutic modalities.¹ Examples of such infections include thrush, *Candida* esophagitis, *Candida* urinary tract infection, *Candida* vaginitis, *Candida* endocarditis, *Candida* endophthalmitis, *Candida* osteomyelitis, hepatosplenic candidiasis, and widespread disseminated candidiasis. These *Candida* infections have been well documented. Basic in vitro investigative work has focused on their pathogenesis, and experimental animal models have been used to evaluate therapy for most of these infections.

During the past decade, directly traceable to the initial writings of the medical practitioner, C. Orian Truss, in the *Journal of Orthomolecular Psychiatry*²⁻⁴ and his subsequent publication of a book entitled *The Missing Diagnosis*,⁵ a syndrome has been described related to the presence of *Candida* in normal mucocutaneous flora. Synonyms for this syndrome include: candidiasis-hypersensitivity syndrome, the *Candida* syndrome, *Candida* allergy syndrome, the yeast syndrome, polysystemic chronic candidiasis, systemic candidiasis, chronic candidiasis syndrome, the missing diagnosis, and the yeast connection.

In 1983, stimulated by the writings of Dr. Truss, William G. Crook, a private practitioner in Jackson, Tenn., published a book that has become widely read, entitled, *The Yeast Connection. A Medical Breakthrough*.⁶ Dr. Crook is described as a preventative medicine "evangelist" who says, "The road to better health will not be found through more drugs, doctors, or hospitals. It will be discovered through better nutrition and changes in life-

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styles.” This book had multiple editions and is now published by Vintage Books, New York. Since these two publications first appeared, at least 10 more books on this subject have been published.⁷⁻¹⁶ The backgrounds of the authors of these writings, extracted from descriptions contained within the publications, reflect predominately those associated with writing nutrition books, acupuncture, health foods, guides for vitamin use, practice of medicine within the field of allergy, general medicine, gynecology, and weight control. Bibliographic sketches of some of these authors, extracted from the covers or introductions to the books, are summarized in Table I. There is no evidence in any of the bibliographical sketches that any of the authors have received formal training within the disciplines of infectious diseases, allergy, immunology, or mycology.

As a result of the interest generated by this literature, there have been four “national” conferences on this syndrome, including the Dallas Conference in 1982, the Birmingham Conference in 1983, the San Francisco Conference, and the Dallas Update Conference in 1987. At least 14 support groups have been formed in various cities throughout the United States (Table II). Dr. Crook is engaged in a national campaign to raise funds. He claims, “We need millions of dollars to support needed research studies.”

The symptoms of the Candida syndrome are nonspecific and span multiple organ systems. They include fatigue, headache, irritability, depression, memory loss, hypoglycemia, premenstrual syndrome, vaginitis, urinary “disorders,” “digestive disorders,” skin “problems,” respiratory “problems,” muscle pain, impotence, short attention span, learning difficulties, and hyperactivity.⁶ The pathogenesis is related to the presence of Candida, predominately in the gastrointestinal tract. Exogenous consumption of the organism in foods containing yeasts and promotion of its growth from antibiotics, steroids, birth control pills, and foods conducive to Candida growth are claimed to cause overgrowth of the organism in the gastrointestinal tract or in the vagina. Overgrowth of the organism is said to depress the immune system generally and to result in weakened defenses and the generalized symptoms. The immune system is further weakened if there are nutritional deficiencies, environmental mold exposure, emotional stress or deprivation, food and inhalant allergies, and exposure to chemical toxins. There is speculation that the syndrome is not limited to man but may also occur in chickens and pigs.⁶ Within the extensive literature are numerous case examples and anecdotes. An example is as follows:⁶ “Case Report: Sherry.”

“I dread going to the beach and putting on a bathing suit.”

“Following treatment with diet and nystatin, Sherry’s headaches, fatigue,

TABLE I. OTHER "CANDIDA SYNDROME" AUTHORS

Shirley S. Lorenzani, Ph. D.: Practicing nutritionist who has "experienced and conquered candidiasis"

John Parks Trowbridge, M.D.: Recognized leader in the holistic-preventive medical movement

Morton Walker, D.P.M.: Professional medical journalist and author for over 17 years, specializing in holistic medicine, orthomolecular nutrition, and alternative methods of healing

Lue De Schepper, M.D., Ph.D., C.A.: Specialist in acupuncture

Pat Connoly: Curator of the Price-Pottenger Nutrition Foundation

Howard E. Hagglund, M.D.: Private practice, Norman, Oklahoma. Member of the American Medical Association and the Orthomolecular Medical Society. Board member of the Bio-Ecological Institute and on the faculty of the 1984 Clinical Ecology Seminar of the American Academy of Environmental Medicine.

Elizabeth Rose: Afflicted with the Candida syndrome

Richard A. Passwater, Ph.D.: Biochemist. Author of *Supernutrition: Megavitamin Revolution* and *Supernutrition for Healthy Hearts*, *Easy No-Flab Diet*, *Cancer and Its Nutritional Therapies*, *Selenium as Food and Medicine*, and *Trace Elements*, *Hair Analysis and Nutrition*

Earl Mindell, R.P.H., Ph.D.: Author of *The Vitamin Bible*, *The Vitamin Bible for your Kids*, and *The Quick and Easy Guide to Better Health*

Leon Chaitow, D.O., N.D.: Practicing osteopath, naturopath, and acupuncturist

Dennis W. Remington, M.D.: Family physician in private practice with an interest in nutrition, exercise, and food and chemical allergies. Member of American Society of Bariatric Physicians and American Academy of Environmental Medicine

Barbara W. Higa: Dietician working in a medical practice with patients suffering from food and chemical allergies, obesity, and yeast problems

constipation, premenstrual tension and abdominal pain improved. And her breasts enlarged significantly."

The diagnosis of the condition is based on the presence of the symptoms and the response to the therapy. Dr. Crook advocates using the responses to a questionnaire as a guide to the diagnosis. The questions are listed in Table III. If there are 3 or 4 positive responses, "yeasts possibly play a role" in causing symptoms. If there are 5 or 6 positive responses, "yeasts probably play a role" in causing symptoms. If 7 or more responses are positive, "symptoms are almost certainly yeast connected." An adjunct to the diagnosis has been the use of serodiagnostic tests for Candida antibodies in blood. Response to therapy is important in substantiating the diagnosis.

Therapy consists of avoiding carbohydrates which might facilitate growth of Candida in the gastrointestinal tract and avoiding foods that contain yeasts. Use of medications known to predispose to increased yeast colonization such as antibiotics, steroids, and birth control pills is discontinued. A large variety

TABLE II. CANDIDA SYNDROME SUPPORT GROUPS
INCOMPLETE LIST

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- 1) Candida Foundation
 - 2) Rocky Mountain Environmental Health Association
 - 3) New York Candida Support Group
 - 4) Human Ecology Action League
 - 5) Partners In Health
 - 6) Western New York Allergy and Ecology Association
 - 7) RISE
 - 8) Schizophrenia Association of Greater Washington
 - 9) Environmental Health Association
 - 10) Candida Research and Information Foundation
 - 11) Candidiasis Connection
 - 12) Candida Support Group of Bethesda
 - 13) Candida Group Therapy
 - 14) Phoenix Area Candida Support Group
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TABLE III.

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- 1) Have you taken repeated "rounds" of antibiotic drugs?
 - 2) Have you been troubled by premenstrual tension, abdominal pain, menstrual problems, vaginitis, prostatitis, or loss of sexual interest?
 - 3) Does exposure to tobacco, perfume, and other chemical odors provoke moderate to severe symptoms?
 - 4) Do you crave sugar, breads, or alcoholic beverages?
 - 5) Are you bothered by recurrent digestive symptoms?
 - 6) Are you bothered by fatigue, depression poor memory, or "nerves"?
 - 7) Are you bothered by hives, psoriasis, or other chronic skin rashes?
 - 8) Have you ever taken birth control pills? Are you bothered by headaches, muscle and joint pains, or incoordination?
 - 9) Do you feel bad all over, yet the cause hasn't been found?
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of anti-Candida agents have been used as specific therapy including: nystatin, ketoconazole, caprylic acid, and garlic. Replacing colonizing yeasts with *Lactobacillus acidophilus* has also been advocated. Enriching the diet with essential fatty acids, minerals, and vitamins has been suggested as adjunctive therapy.

Another symptom complex, unrelated to "The Yeast Connection," considered to be caused by Candida, is termed the "Candida drunken syndrome" or the "Meitei-Sho syndrome." This syndrome is characterized by inebriation in the absence of exogenous alcohol intake. The alcohol in the blood is thought to be produced by large numbers of Candida in the gastrointestinal tract that ferment carbohydrates in the diet. This disease was reviewed by Kazuo Iwata.¹⁷ Twenty-four cases were presented. A recent case of notoriety was that of Duffy Mayo, described in the newspaper press on September 25, 1983. This young boy carried a diagnosis of autism, which

was said to improve significantly under ketoconazole therapy. His improvement was considered to be a result of lowering alcohol levels in his blood by suppressing the *Candida* colonization in his gastrointestinal tract.

Certain generalizations can be made regarding "the yeast connection." The symptoms described by the authors are generalized and affect nearly every organ system. As listed, some symptoms are widely diverse; for instance, both fatigue and hyperactivity are included. Nearly every normal individual has had certain of these symptoms during the course of a normal lifespan. Case reports are anecdotal. Possibly none of the authors have had formal training in the disciplines of allergy and immunology, infectious diseases, or mycology. After nearly a decade since the original description, no articles on this disease appear in peer reviewed journals included in the *Index Medicus*. There are no prospective controlled therapeutic studies, and there are no animal model data.

The question whether there is an epidemic of the *Candida* syndrome, which affects one out of 10 Americans, i.e., millions of people, will be left for the reader to decide. The critical question concerning the *Candida* syndrome relates to whether there is a subset of patients who have a pathophysiological response to the *Candida* comprising their normal flora, and whose response is manifested by symptoms related to an allergic reaction or the diffuse symptoms described. At this time there are insufficient data or studies to answer such a question. The American Academy of Allergy and Immunology has formulated a position statement and has described the concept of the chronic candidiasis syndrome as "speculative and unproved," and advises conservative use of ketoconazole for the treatment of the chronic candidiasis syndrome because of its toxicity.

Additional questions arise regarding this and similar popularized diseases. For instance, What should the role of the academic medical establishment be in taking widely publicized positions on such popular and unproved concepts? Certainly large sums of money have been spent by patients on purchasing therapeutics, on the literature purchased by patients, and on diagnostic evaluations. Should research be done on such a concept? Who should perform the research? Who should fund the research? With this disease having such heterogeneous and subjective symptoms is it possible to study the disease meaningfully in a prospective study design? These questions of interest await future responses.

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